

REMARKS

Claim Rejections

Independent Claim 1 and its remaining dependent claims 2, 4-5 and 11-13 have been rejected under 35 U.S.C. 102 and 103(a) as being unpatentable over U.S. Pat. No. 5,211,732 to Abbott et al. (hereinafter referred to as "Abbott"), either alone or in combination with U.S. Pat. No. 6,321,573 to Fritsche et al. (hereinafter referred to as "Fritsche") and U.S. Pat. No. 4,147,040 to Altman (hereinafter referred to as "Altman").

Independent claim 1 has been amended to recite a method for producing a quartz glass blank including a method step in which SiO_2 particles are produced by a row of deposition burners and deposited on a cylinder outer surface of a carrier rotating about its longitudinal axis to form a cylindrical porous SiO_2 soot body. A temperature adjustment body alters the surface temperature of the soot body as it is formed. The temperature adjustment body has one or more reflector elements extending along a substantial part of the SiO_2 soot body. The reflector element or elements acts as a homogeneous reflector with a reflectance for IR radiation between 80% and 100%, has a temperature-raising effect due to heat radiation, and has an efficiency, defined as a solid angle covering the forming SiO_2 soot body, of at least 60%.

The present invention produces a quartz glass blank with high axial and radial optical homogeneity by uniformly heating the blank as it is being formed. See specification, page 3, lines 24-26; page 4, lines 15-29. In contrast, prior art methods for producing quartz glass blanks encounter the problem of variations in axial properties of the blank due to non-uniform, localized heating of the blank during the manufacturing process.

The method of independent claim 1 as amended is not suggested by any of the cited

prior art, and reconsideration of the rejection is respectfully requested.

Abbott teaches a method for forming a porous glass preform by oscillating a row of deposition burners along a path parallel to the longitudinal axis of a preform. However, Abbott has no temperature adjustment body to alter the surface temperature of the soot body as it is formed, and Abbott also does not suggest one or more reflector elements extending along a substantial part of the SiO_2 soot body. The Examiner has read Abbott to have an inner wall 69, but Abbott does not suggest that wall 69 acts as a homogeneous reflector with a reflectance for IR radiation between 80% and 100%, nor does Abbott suggest that the wall 69 has an efficiency of at least 60%. In fact, wall 69 only extends along a very small angular portion of the soot body.

Therefore, Abbott fails to suggest a method as recited in claim 1.

Fritsche teaches a method for manufacturing a quartz glass preform in which SiO_2 particles are deposited by a plurality of deposition burners that move in a repeated pattern along the forming preform between predetermined turnaround points, where their motion is reversed. Fritsche, Col. 5, lines 3-26. A concave, heat-shielding screen is positioned on one side of the preform. Fritsche, Col. 6, lines 17-27. To prevent overheating of the preform at the turnaround points, the screen is configured with slits that function as heat sinks so as to locally cool the surface of the soot body at the turnaround points. See Fritsche, Col. 5, lines 44-61.

Fritsche teaches use of a concave heat shield, but does not suggest the use of a temperature adjustment body in the form of one or more reflector elements covering the forming SiO_2 soot body and having an efficiency, defined as a solid angle covering the forming soot body, of at least 60%, as recited in claim 1. As depicted in Figures 6 and 7 of Fritsche, a

solid angle defined by the heat shield as disclosed in Fritsche covers less than half of the forming soot body.

Therefore, Fritsche does not suggest a method as recited in claim 1, as amended, where the quartz glass blank is produced using one or more reflector elements covering the forming SiO_2 soot body and having an efficiency, defined as a solid angle covering the forming soot body, of at least 60%.

Altman is cited only against claims 8 and 9, which have been cancelled without prejudice.

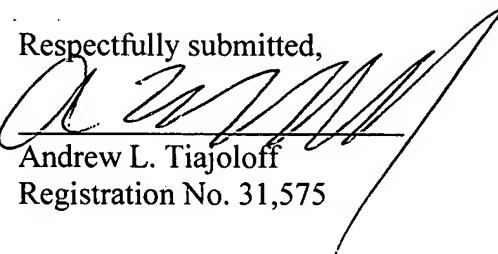
Therefore, the cited prior art and applicant's admitted prior art cannot be properly combined to suggest the invention recited in claim 1, and reconsideration of the rejection thereof is respectfully requested.

All claims having been shown to distinguish over the prior art in structure, function and result, formal allowance is respectfully requested.

Should any questions arise, the Patent Office is invited to telephone attorney for applicants at 212-490-3285.

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Respectfully submitted,

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